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**1993 GORDON RESEARCH CONFERENCE**  
**ON**  
**OPTICAL SIGNAL PROCESSING AND HOLOGRAPHY**

**June 27 - July 2, 1994**

**Submitted to:**

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**December 17, 1993**

1993 Gordon Research Conference on  
Optical Signal Processing and Holography

Final Progress Report

The 1993 Gordon Research Conference on "Optical Signal Processing and Holography" was held in Plymouth State College, Plymouth, New Hampshire from June 27 (6:00 p.m.) to July 2 (12:00 p.m.). The conference had about ninety-eight participants; twenty percent were from foreign countries. There was a healthy mixture of scientists from universities, national laboratories, and private industries, including young scientists and graduate students from various universities in the United States.

The conference brought together scientists and engineers who are working on different aspects of optical signal processing and holography, and who share common interest in using diffraction optics of light for their investigation. The topics discussed included: digital-optical computing, optical neural networks, novel transform techniques, optical memories, pseudodeep holography, bacterio Rhodopsin thin films, photorefractive material, electro-optic devices, as well as photopolymer holography. The program included twenty-two invited speakers, twelve discussion leaders and over thirty poster papers. The number of invited speakers was a few more than the same conference held in 1991, two years earlier. The discussion following the talks was very active, interesting and intense in every session. The discussions often went beyond the sessions into the afternoon and evening during the free-time scheduled for the conferences.

New techniques, new devices, and new approaches were presented in each session with thorough presentation. The advances of the electro-optical technology as applied to the optical signal processing and holography were particularly stressed. Invited scientists from foreign countries, such as

Russia, Germany, China, Japan, Mexico, and Spain also provided the research activities in their home countries. As a result, the conference had converged a global scientific exchange in the advances of optical signal processing and holography, for which new directions and new techniques were defined.

There was one general poster session and a short-topic presentation. Comments indicated that the poster session and the short-topic discussion had stimulated deeper content of the subject and were appreciated by the conferees. In general, the participants enjoyed the atmosphere of the conference, for which they felt that this conference was very successful and indeed worth attending. Communication with the Gordon Conference office also indicated this conference was highly successful and it is worthwhile to continue.

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